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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,174	11/11/2003	Michael Donovan Mitchell	8681RCR2	4650

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EXAMINER

KIM, SUN U

ART UNIT PAPER NUMBER

1723

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/705,174

Applicant(s)

MITCHELL ET AL.

Examiner

Yoon-Young Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-10 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-10 and 12-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

This Office Action is in response to the Amendment filed on April 3, 2006.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 10 and 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Koslow, U.S Patent No. 6,630,016 B2.

Regarding Claim 1, Koslow discloses a filter for providing potable water, comprising: a housing having an inlet and an outlet (Col. 1, Lines 41-44); and a filter material disposed within the housing formed at least in part from a plurality of mesoporous activated carbon filter particles (Col. 2, Lines 1-14) and particles selected from the group consisting of mesoporous activated carbon filter particles coated entirely with a cationic polymer, mesoporous activated carbon filter particles partially coated with a cationic polymer, and mixtures thereof (Col. 6, Lines 4-10); wherein the filter material has a F-BLR of greater than about 2 logs, and a F-VLR of greater than about 1 log (Tables I and II).

Regarding Claim 2, Koslow discloses the cationic polymer is selected from the group consisting of: polyvinylamine, poly(N-methylvinylamine), polyallylamine, polyallyldimethylamine, polydiallylmethylamine, polydiallyldimethylammonium chloride, polyvinylpyridinium chloride, poly(2-vinylpyridine), poly(4-vinylpyridine), polyvinylimidazole, poly(4-aminomethylstyrene),

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poly(4-aminostyrene), polyvinyl(acrylamide-co-dimethylaminopropylacrylamide), polyvinyl(acrylamide-co-dimethylaminoethylmethacrylate), polyethyleneimine, polylysine, DAB-Am and PAMAM dendrimers, polyaminoamides, polyhexamethylenebiguanide, polydimethylamine-epichlorohydrine, aminopropyltriethoxysilane, N-(2-aminoethyl)-3-aminopropyltrimethoxysilane, N-trimethoxysilylpropyl-N,N,N-trimethylammonium chloride, bis(trimethoxysilylpropyl)amine, chitosan, grafted starch, the product of alkylation of polyethyleneimine by methylchloride, the product of alkylation of polyaminoamides with epichlorohydrine, cationic polyacrylamide with cationic monomers, dimethyl aminoethyl acrylate methyl chloride (AETAC), dimethyl aminoethyl methacrylate methyl chloride (METAC), acrylamidopropyl trimethyl ammonium chloride (APTAC), methacryl amodopropyl trimethyl ammonium chloride (MAPTAC), diallyl dimethyl ammonium chloride (DADMAC), ionenes, silanes and mixtures thereof (Col. 6, Line 35 – Col. 7, Line 22).

Regarding Claims 3 and 14, Koslow discloses the cationic polymer is selected from the group consisting of: polyaminoamides, polyethyleneimine, polyvinylamine, polydiallyldimethylammonium chloride, polydimethylamine-epichlorohydrin, polyhexamethylenebiguanide, poly-[2-(2-ethoxy)-ethoxyethyl-guanidinium] chloride (Col. 6, Line 35 – Col. 7, Line 22).

Regarding Claim 4, Koslow discloses that at least a portion of the mesoporous activated carbon filter particles, the mesoporous activated carbon filter particles coated entirely with a cationic polymer, or the mesoporous activated carbon filter particles partially coated with a cationic polymer are further coated with a silver or a silver containing material (Col. 7, Lines 22-11).

Regarding Claim 10, Koslow discloses a filter for providing potable water, comprising: a housing having an inlet and an outlet (Col. 1, Lines 41-44); and a filter material disposed within

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the housing formed at least in part from a plurality of mesoporous activated carbon filter particles (Col. 2, Lines 1-14) and other materials particles selected from the group consisting of activated carbon powders, activated carbon granules, activated carbon fibers, zeolites, activated alumina, activated magnesia, diatomaceous earth, activated silica, hydrotalcites, glass, polyethylene fibers, polypropylene fibers, ethylene maleic anhydride copolymers fibers, sand, clay and mixtures thereof, wherein at least a portion of the mesoporous activated carbon filter particles partially coated with a cationic polymer (Col. 6, Lines 4-10); wherein at least a portion of the other materials are coated with silver or a silver containing material (Col. 10, Lines 22-39); wherein the filter material has a F-BLR of greater than about 2 logs, and a F-VLR of greater than about 1 log (Tables I and II).

Regarding Claim 15, Koslow discloses a filter for providing potable water, comprising: a housing having an inlet and an outlet (Col. 1, Lines 41-44); and a filter material disposed within the housing formed at least in part from a plurality of mesoporous activated carbon filter particles (Col. 2, Lines 1-14) wherein at least a portion of the mesoporous activated carbon filter particles are at least partially coated with a cationic polymer (Col. 6, Lines 4-10); wherein the filter is operable to remove bacteria, viruses, microbials, or any combination thereof from an influent passing through the filter (Col. 1, Lines 8-26).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koslow as applied to Claim 1, and further in view of Rosenbaum, U.S. Patent No. 5,460,792.

Regarding Claim 5, Koslow does not disclose the mesoporous and macroporous pore volumes. Rosenbaum teaches a filter for providing potable water wherein the sum of the mesopore and macropore volumes is between about 0.2 mL/g and 2 mL/g (Col. 12, Lines 7-17). One of skill in the art would by routine experimentation find the optimum pore volume. It is not inventive to discover the optimum or workable ranges by routine experimentation when the general conditions of a claim are disclosed in the prior art. In re Aller, 105 USPQ 233, 235 (CCPA 1955).

5. Claims 6 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koslow as applied to Claims 1 and 10, and further in view of Jagtoyen et al., Pub No. US 2004/0040906 A1.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37

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CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Regarding Claim 6, Koslow does not disclose the BRI or VRI of the filter particles. Jagtoyen teaches that the plurality of mesoporous activated carbon filter particles has a BRI of greater than about 99% (Par. 44) and a VRI of greater than about 90% (Par. 21). One of skill in the art would by routine experimentation find the optimum BRI and VRI. It is not inventive to discover the optimum or workable ranges by routine experimentation when the general conditions of a claim are disclosed in the prior art. In re Aller, 105 USPQ 233, 235 (CCPA 1955).

Regarding Claims 12-13, Koslow discloses does not disclose a package. Jagtoyen teaches a package for containing the filter; and wherein either the package or the filter housing comprises information that the filter or filter material provides: bacteria removal; virus removal; microbial removal; killing of bacteria, killing of viruses, killing of microbial, or any combination of these (Par. 283). It would have been obvious to modify Koslow with the element of Jagtoyen in order to inform the user about the benefits and importance of using the filter (Par. 283).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being obvious over Koslow as applied to Claim 1, and further in view of Judd et al., U.S. Patent No. 5,376,279.

Regarding Claims 8, Koslow does not disclose the single-collector efficiency or the filter coefficient. Judd teaches a filter material having a single-collector efficiency of between about 0.005 and 0.25 (Table 2), and a filter coefficient, which can be calculated from the values of  $C/C_o$  (Fig. 5), between about  $40 \text{ m}^{-1}$  and about  $14,000 \text{ m}^{-1}$ . One of skill in the art would by routine experimentation find the optimum single-collector efficiency and filter coefficient. It is not inventive to discover the optimum or workable ranges by routine experimentation when the general conditions of a claim are disclosed in the prior art. In re Aller, 105 USPQ 233, 235 (CCPA 1955).

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koslow as applied to Claim 1, and further in view of Denkwicz, Jr. et al., U. S. Patent No. 5,772,896.

Regarding Claim 9, Koslow does not disclose a point zero charge or an ORP. Denkwicz teaches a point zero charge between about 9 and about 12 (Col. 1, Lines 45-51) and an ORP between about 290 mV and about 175 mV (Col. 1, Lines 23-27). One of skill in the art would by routine experimentation find the optimum point zero charge and ORP. It is not inventive to discover the optimum or workable ranges by routine experimentation when the general conditions of a claim are disclosed in the prior art. In re Aller, 105 USPQ 233, 235 (CCPA 1955).

#### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.



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Koslow teaches the invention as claimed.

**Conclusion**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yoon-Young Kim whose telephone number is (571) 272-2240. The examiner can normally be reached on 8:30-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YK  
06/01/06

  
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